

SCOMM

62:15

Alaska State Legislature

Senator Drue Pearce, Chair
Senator Tim Kelly
Senator Rick Halford
Senator Paul Fischer
Senator Al Adams



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LEGISLATIVE COUNSEL
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CLERK OF THE SENATE

ALASKA STATE LEGISLATURE
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SENATE SPECIAL COMMITTEE ON OIL AND GAS

AGENDA

WEDNESDAY, MARCH 21 5:00 - 8:00 P.M.

SENATE FINANCE -- ROOM 518

PRESENTATION OF EXXON'S 1990 SUMMER CLEAN UP PROGRAM

*** SB 421 -- OIL SPILL TECHNOLOGY REVIEW COMMISSION**

SPONSOR: SENATOR SZYMANSKI

STATEWIDE TELECONFERENCE -- TESTIMONY BY INVITATION

*** Indicates first public hearing**

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION : **SB 421**
PUBLISH DATE : **1/30/90**

FISCAL NOTE

REQUEST:

Revision Date: _____
Title: **An Act establishing an oil and
hazardous substance spill technology review commission...**
Sponsor: **Senator Szymanski**
Requestor: **Senate Oil & Gas Committee**

Agency Affected: **Environ. Conservation**
BRU: **Environmental Quality**
Components: **Environmental Quality**

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0
TRAVEL	17.9	17.9	17.9	17.9	0.0	0.0
CONTRACTUAL	220.0	200.0	100.0	100.0	0.0	0.0
SUPPLIES	0.0	0.0	0.0	0.0	0.0	0.0
EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0
LAND&STRUCTURES	0.0	0.0	0.0	0.0	0.0	0.0
GRANTS,CLAIMS	0.0	0.0	0.0	0.0	0.0	0.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	237.9	217.9	117.9	117.9	0.0	0.0
CAPITAL	0.0	0.0	0.0	0.0	0.0	0.0
REVENUE	0.0	0.0	0.0	0.0	0.0	0.0

FUNDING: (Thousands of Dollars)

GENERAL FUND	237.9	217.9	117.9	117.9	0.0	0.0
FEDERAL FUNDS	0.0	0.0	0.0	0.0	0.0	0.0
OTHER	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	237.9	217.9	117.9	117.9	0.0	0.0

POSITIONS:

FULL-TIME	0.0	0.0	0.0	0.0	0.0	0.0
PART-TIME	0.0	0.0	0.0	0.0	0.0	0.0
TEMPORARY	0.0	0.0	0.0	0.0	0.0	0.0

ANALYSIS: (Attach a separate page if necessary)

Please see attached.

Prepared by: **Lynn Kent**

Division: **Environmental Quality**

Phone : **465-2630**

Date : **3/21/90**

Approved by Commissioner: *ADD/lyl*

Agency: **Environmental Conservation**

Date: **3/21/90**

Distribution (by preparer) :

Legislative Finance

Legislative Sponsor

Requestor

Office of Management and Budget

Impacted Agency(ies)

Senate Bill 421
1/30/90 Version

Section one of the bill requires the Department to adopt regulations regarding oil and hazardous substance containment and cleanup technologies and products. There is contractual money included (\$20.0) in FY 91 for assistance in writing the regulations.

Section two of the bill establishes an Oil and Hazardous Substance Spill Technology Review Commission.

Travel costs for the seven commission members are based on four meetings per year, three days per meeting at \$80 per diem (\$6.7) and \$400 average per airfare (\$11.2). Funds (\$200.0) are included for technical assistance contracts which may include data collection, analysis of response technologies, and technical research. These funds are reduced to \$100.0 after the first two fiscal years.

This section also gives the commission authority to hire staff. There is the potential for the commission to require administrative and technical help. This staff is not reflected in this fiscal note.

FY 91 fiscal detail

<u>Position</u>	<u>100</u>	<u>200</u>	<u>300</u>	<u>400</u>	<u>500</u>	<u>Total</u>
Contractual (Regs)			20.0			\$ 20.0
Commission members		17.9				17.9
Contractual			200.0			200.0
TOTALS	0	17.9	220.0			\$237.9

Sections three, four and five of the bill have no fiscal impact on the Department, except to note that the commission is in effect through FY 94.

Alaska State Legislature

Senator Mike Szymanski

Alaska State Legislature
Bill 421
Title V
Oil and Hazardous Substance
Spill Technology Review Commission
Department of Environmental Conservation
Interim
State - 1987
Page - 1
Date - 10/1/87
10/1/87
10/1/87

SPONSOR STATEMENT

SENATE BILL 421, an act establishing an Oil and Hazardous Substance Spill Technology Review Commission in the Department of Environmental Conservation

One of the "lessons" which was learned from the Exxon Valdez Oil Spill was that the technology on how to deal with this type of major disaster was woefully inadequate. Neither the federal government, the state government nor the oil companies had developed an efficient method of cleaning up our oil spill; furthermore, there was no mechanism in place to screen and evaluate all the many proposals which were brought to the State's attention by private companies --each one of whom felt that their product would "do the job."

At the time of the Exxon Valdez Oil Spill and subsequent to March 24, it was "assumed" that the Environmental Protection Agency was the federal coordinating agency responsible for oil discharge technology. In fact, the EPA does not carry out demonstration projects on various products, nor is it required to have a listing of "preapproved" products. Rather, it maintains a "schedule" or listing of recommended products that have met certain general requirements. Thus, when a company says that its product is "approved by the EPA", it means little in terms of product effectiveness.

Recognizing this lack of technological research and knowledge, both private industry, such as the American Petroleum Institute, and federal legislation, are attempting to meet the need. The language in Title V of the the Senate version of the major oil spill legislation which is presently in conference committee would create a Prince William Sound Oil Spill Recovery Institute, within the Prince William Science Center in Cordova. Its mandate would be to actually conduct research and demonstration projects; UNDER ITS MANDATE, ALL RESEARCH MUST BE DIRECTLY RELATED TO THE EXXON VALDEZ OIL SPILL AND ITS EFFECTS.

Title VII of the federal legislation is still in the House/ Senate Conference Committee. This section of the legislation relates solely to federal research into oil spill technology.

Senate Bill 421 will not duplicate any of the above efforts; on the contrary, its provisions would complement and dovetail with the federal legislation. Senate Bill 421 sets up a Technology Review Commission within the Department of Environmental Conservation which would serve as a clearinghouse for technology review

information and funding nationally and internationally; its purpose would be to review what is happening at all levels and to make recommendations for are as of research and available funding mechanisms. While the members of the Commission are not set out in statute, it is intended that the scientific community would be represented.

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

STEVE COWPER, GOVERNOR

OFFICE OF THE COMMISSIONER
P.O. BOX 0, JUNEAU, ALASKA 99811-1800

Telephone:
(907) 465-2600

January 12, 1990

The Honorable Mike Szymanski
Alaska State Senate
P.O. Box V
Juneau, AK 99811

Dear Senator Szymanski:

Thanks for your letter proposing to establish a technology review board or task force to oversee a review of current oil spill technology and to make recommendations to the State and to the federal government about additional research and evaluation that is needed in the future.

I think this is a good idea. It would be very beneficial to this Department to have the advice of a well-respected, technically competent, and broad-based board in looking at existing technology and also in focusing attention on the need to develop improved technology. I also agree with your thought that this group should not focus on individual products. We would certainly look forward to working with you on the appropriate institutional arrangements to support such a group.

Let me know what I can do to help.

Sincerely,

Dennis D. Welso
Dennis D. Welso
Commissioner

cc: Commissioner Don Collinsworth
Commissioner Lennie Gorsuch

OPINION

Anchorage
Daily News

Winner Pulitzer Prize Gold Medal for Public Service 1976, 1989

Gerald E. Grilly
PublisherHoward Weaver
Managing EditorMichael Carey
Editorial Page EditorKatherine Fanning, Editor and Publisher 1971 to 1983
Lawrence Fanning, Editor and Publisher 1967 to 1971

Founded in 1946 by Norman C. Brown

Ignorant then,
ignorant now

Here we are, less than three weeks until Exxon plans to quit work for the winter, and the most fundamental questions about the "cleanup" still linger. What oil cleaning techniques work best? Does even the best tactic do more harm than good?

Recent reports give cause to wonder. Federal and state scientists continue to have reservations about two of Exxon's preferred techniques: high-pressure, hot water washing and its Corexit beach cleaning chemical.

Hot water washing kills many of the beach organisms that survived the initial spill — perhaps as much as 40 percent. As for Corexit, state scientists still wonder if using it just adds a chemical insult to the oil spill injury.

These persistent doubts speak to the industry's woeful state of ignorance about spill cleanups. Before this spill, we were assured Alaska's industry had state of the art cleanup equipment. It's obvious the industry didn't have state of the art cleanup information.

That ignorance is inexcusable. State and federal regulators should have pushed the industry to find out what cleaning techniques are both safe and effective.

Now, Alaska's waters may be paying twice for that ignorance. Beach treatment does remove some, but not all, oil. But the cleaning itself carries a new environmental price. Almost every cleanup decision involves tradeoffs.

Studies under way may eventually help settle the question in future spills. Several beaches will be left untreated as a control for judging what the cleanup accomplishes.

When it comes to oil spills, Exxon and the rest of Alaska's oil industry can't be allowed to let ignorance become an excuse for indolence. They must demonstrate they have safe and effective ways to get oil off Alaska's water and beaches. If the Exxon cleanup techniques don't measure up, government regulators should make sure the industry finds something that does.

WE SPEND 300 BILLION ON DEFENSE
BUT WHICH ONE POSES THE GREAT
THREAT TO OUR SECURITY?

Bush's love feast

chris
matthe

WASHINGTON — If you think multimillionaire Malcolm Forbes knows how to throw a party, wait until you see what George Bush has planned for this fall.

With the president running above 70 percent in U.S. popularity polls, the loyal opposition is running for cover. On issues from flag-burning to capital gains to the Nicaraguan contras, the Democratic leadership is lowering its head, trying to limit the damage. The bottom line: George Bush is going to get exactly what he wants.

Flag burning. President Bush and the Republicans have their proposed constitutional amendment against "desecration" of the Stars and Stripes a hot political issue. Many Democrats who see the proposed amendment as a threat to the Bill of Rights are nevertheless scared to vote against it.

The Democrats' plan: Leave the Constitution alone, steer clear of ambiguous words like "desecrate"; just pass an innocuous stat-

ute making it a federal misdemeanor to "mutilate, burn or trample Old Glory."

The goal is not patriotic policy but damage control.

But the Democrats worried that past flag-protection bills be enough. They reason to worry. If leader Robert Michel is the prime mover, a resolution to make flag-protection the Constitution.

This is the Democratic leadership's worst

A friend who didn't

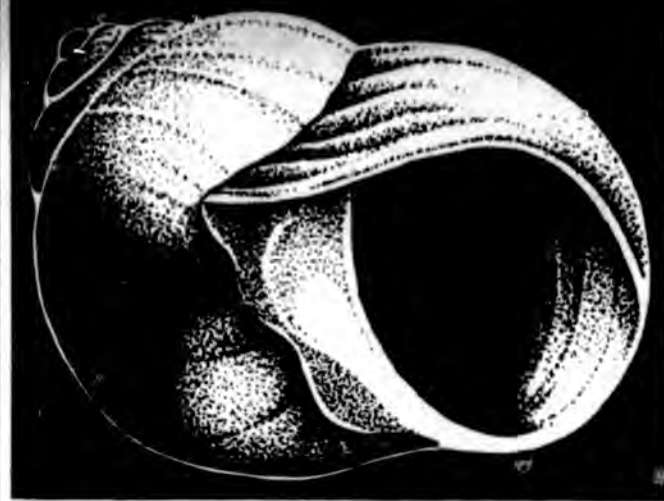
Cordova's Prince William Sound Science Center, centrally located on the southeastern shores of Prince William Sound, is a research facility established to conduct and assist basic and applied research in the Prince William Sound region of Alaska. Incorporated in April, 1989, as the Prince William Sound Science and Technology Institute, the Science Center is a private, nonprofit institution that provides an environment where scientists can work, discuss and exchange ideas in a creative and cooperative atmosphere.

For the past 15 years, Cordova-based researchers have promoted the concept of a centralized research institute in the Prince William Sound and Copper River Delta region to facilitate a deeper understanding of the biological processes at work in this unique diversity of subarctic habitats. Such a facility would serve as a base of operations, help identify research needs and act as an information repository for research conducted in Prince William Sound and the Copper River Delta.

The March 24, 1989, Exxon Valdez oil spill in Prince William Sound accelerated the need for basic and applied ecological research on the effects of oil spills in subarctic regions. Recognizing this need, a group of local scientists, representatives of the fishing industry, and city officials incorporated the Center in April 1989 as a research facility where scientists may conduct both non-oil and oil-related scientific studies. A Board of Directors provides overall policy and a Scientific Advisory Board formulates the scientific direction of the Center.

The purpose of the Center is the following:

- Provide laboratory space, equipment, and logistical and administrative support for research scientists and students.
- Assist development of a long-term environmental monitoring program for the accumulation of baseline data on Prince William Sound and its environs.
- Support other institutions and agencies conducting research in Prince William Sound and the Copper River Delta region.
- Facilitate and fund research projects in Prince William Sound and its associated drainage basins.
- Serve as a repository for scientific information resulting from research



PRINCE WILLIAM SOUND SCIENCE CENTER

C O R D O V A , A L A S K A

in Prince William Sound and the Copper River Delta region.

- Act as a host institution to the Prince William Sound Oil Spill Recovery Institute.
- Develop scientific information and education programs for students and the general public.
- Serve as an interpretive center for the general public.

The present Center, located on the dock on Breakwater Avenue, has two administrative offices, bunkhouse space for five to seven researchers, a kitchen, and a lunch room-meeting area. One-third of the 3,900-square-foot building is being converted into laboratories and a teaching facility.

Long-term, the Center plans to provide:

- Fully equipped laboratory and office facility
- Living and dining quarters for 30
- Central warehouse and smaller warehouse units for member institutions or projects
- Library
- Dock facilities
- Research vessels and field research equipment
- Classroom and other educational facilities, including an interpretive center and auditorium.

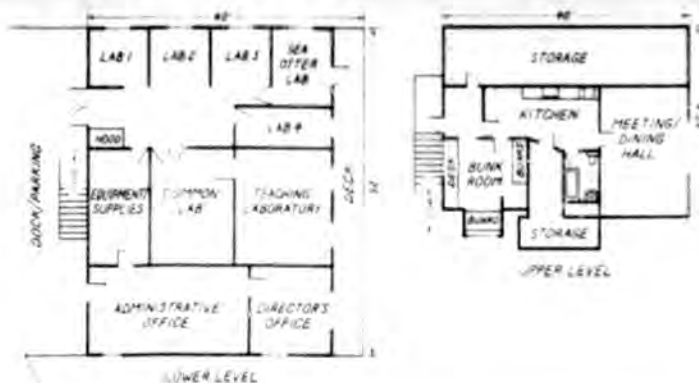
Although the Center's current emphasis is oil spill related, the original concept of creating a center to serve Prince William Sound and Copper River Delta research in perpetuity remains the pri-

mary goal, and will re-emerge as the Center's most important function as the need for oil spill-response research lessens in decades to come.

Cordova, a community of 2,650, is economically dependent on fishing which is in turn dependent upon a healthy ecosystem. The city strongly supports the Center, not only because scientific inquiry and technological development promise to help perpetuate high quality fisheries in Prince William Sound, but also because the Center itself represents diversity, and provides further economic stability to a community primarily dependent upon commercial fishing.

The Center has also received broad support from both private and public agencies, many of which are conducting post-spill research activities in Prince William Sound out of Cordova. These agencies have found Cordova to be the most logical base of operations because of its proximity to oil-impacted areas of the Sound, its proximity to the rich flats of the Copper River Delta, its role as a hub of commercial fishing activity (it is the nation's ninth largest fishing port by value), and its facilities, which include a modern airport and hospital.

The Prince William Sound area has long attracted researchers in both the basic and applied sciences because of its habitat diversity and natural resource wealth. At 15,000 square miles, Prince William Sound, a relatively deep, glacially-



Prince William Sound Science Center

carved fjord, is about 15 times the size of San Francisco Bay. In addition to being one of the world's richest herring and salmon fisheries, its waters and 3,000 miles of shoreline support tremendous numbers of sea birds and marine mammals.

In addition, PWS is adjacent to the Copper River Delta which is the largest contiguous wetland in the western United States. The two million acres of marshland, rivers, streams and ponds of the Delta are home to millions of waterfowl, shorebirds, salmon, trumpeter swans, moose, bear, wolves and many other species of wildlife. The Delta is the only known breeding area for dusky Canada geese and supports more than 11 percent of the world population of trumpeter swans. The USDA-Forest Service recognizes the need for researchers to study this rich wetland habitat and has established the Copper River Delta Institute in Cordova for that purpose. The Science Center will work closely with the Delta Institute to coordinate research and education efforts.

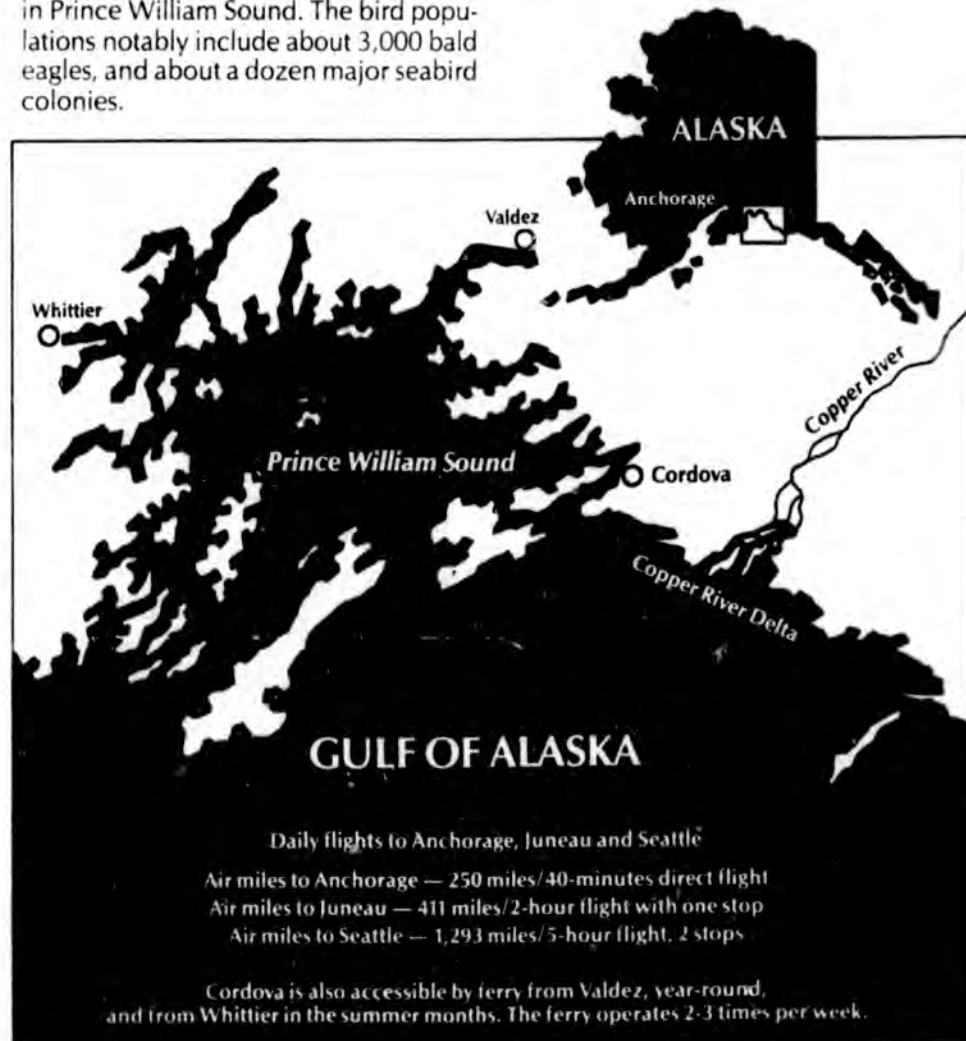
The waters of Prince William Sound support one of the nation's richest combination of salmon and herring fisheries, with an ex-vessel value of about \$85 million in 1988. Other important fisheries include dungeness crab, shrimp, halibut and other groundfish. Five major salmon hatcheries operate in the Sound. Three of

those are managed by Prince William Sound Aquaculture Corporation, including the world's largest hatchery at Esther Island.

The Sound is home water to some of the world's densest populations of sea otters and killer whales, which together with other cetaceans, seals and sea lions represent one of the more profuse populations of marine mammals anywhere.

Two hundred and forty species of birds — including waterfowl, raptors, seabirds, shorebirds and songbirds that aggregately number in the tens of millions, are found in Prince William Sound. The bird populations notably include about 3,000 bald eagles, and about a dozen major seabird colonies.

The Science Center's primary goal is to facilitate research that increases the understanding and knowledge of the biological, chemical and physical processes at work in the unique subarctic environment of southcentral Alaska. A better understanding of these processes will benefit resource managers and the general public by providing essential information for the continued health and diversity of Prince William Sound and the Copper River Delta.



Prince William Sound
Science Center
Box 705
Cordova, Alaska 99574
(907) 424-5800
FAX (907) 424-5820

Daily flights to Anchorage, Juneau and Seattle

Air miles to Anchorage — 250 miles/40-minutes direct flight

Air miles to Juneau — 411 miles/2-hour flight with one stop

Air miles to Seattle — 1,293 miles/5-hour flight, 2 stops

Cordova is also accessible by ferry from Valdez, year-round, and from Whittier in the summer months. The ferry operates 2-3 times per week.

RESEARCH & DEVELOPMENT

The *Exxon Valdez* disaster has awakened industry, government and public interest in oil spill research. The May 1989 report to the president on the *Exxon Valdez* by Transportation Secretary Samuel Skinner and Environmental Protection Agency Administrator William Reilly bluntly concluded that "oil spill cleanup procedures and technologies are primitive." That view was echoed by the American Petroleum Institute, an industry group that issued a report calling for new private investment in research and development of spill response methods. Federal agencies are preparing research and development initiatives in spill response techniques, technology, training and deployment systems. There is also increasing interest in coordination and collaboration with other countries, particularly Canada, to provide faster progress, faster dissemination of research results, and less unnecessary duplication of effort.

Legislation now pending in Congress provides for the establishment and funding of oil spill research and development programs. One proposal would create a Prince William Sound Oil Spill Recovery Institute to identify and develop the best technology for dealing with spills in arctic and subarctic marine environments. Another would establish a minimum of six regional centers to address research needs.

Government-supported research and development should insure that public priorities are met, that government agencies expected to direct future oil spill response will be knowledgeable about new technologies and techniques, that regulation is appropriate and effective and that up-to-date response capabilities are maintained. Coordination and cooperation in research and development programs is in the interest of all concerned.

Alaska's interests in oil spill research should focus on specific Alaska marine habitats, the characteristics of oil and dispersant methods in arctic and subarctic waters, prevention research and training programs to ensure that Alaska response authorities will be fully prepared to understand and cope with future spills.

"We therefore are guinea pigs within a giant experiment, where facts are made to fit the hypothesis made. In our frustration of our loss, we fight an invisible enemy, and suffocate in the air polluted with politics."

Dolly Reff, Kodiak native
Alaska Oil Spill Commission
hearing, 8/11/89

"It's embarrassing to know that the level of our technology of this great country is what it is when I see out there that the most effective thing is an oil absorbent pad."

Dennis Holan, Cordova fisherman
Alaska Oil Spill Commission
hearing, 6/28/89

Recommendation 56
Knowledge transfer

"Cost avoidance also occurs through the efforts of managers of all agencies to try to control information in order to keep other people from finding out whether you might be able to do a better job. Public policy can improve organizations so that they do what we want."

*Professor Matt Berman, University of Alaska
Alaska Oil Spill Commission
hearing, 9/21/89*

Recommendation 57
State research center

The United States, the State of Alaska and Canada should establish cooperative research programs to develop and disseminate knowledge on oil spill prevention and response.

Despite two decades of rising public concern for the environmental consequences of oil spills, research on the subject is still in its infancy. Prevention systems are haphazard. Spill response technology is untested and underdeveloped. Research investment is low, and institutional commitment to this field is scarce.

For a variety of reasons — including, predominantly, ignorance — the latest technologies were not used in the *Exxon Valdez* cleanup. Much of the available cleanup equipment had not been tested in the various circumstances facing cleanup crews. Due to caution or uncertainty, untested techniques were not quickly implemented.

The response effort was handicapped by the absence of a rapid, accurate and comprehensive system, available to all, for information on local conditions, habitat, fish and wildlife, currents and weather.

The primitive state of development of both prevention and response methods holds out some hope that, given sufficient investment, dramatic strides will be made in a short time.

Research dedicated to improving the state of knowledge in oil spill prevention and response should be undertaken to remedy information gaps. Among the topics that should be pursued are the relevant regional geography, environmental assets, weather, technological systems and basic research on the behavior of oil in water. Information management should be included in the agenda for response and contingency plans. Resources should be committed to ensure adequate information systems and services in emergency response efforts in the future.

The state should establish, in the University of Alaska system, an institute for research on oil spill prevention and response policy, technology, testing and evaluation.

An Alaska-based institute should be created and encouraged to strengthen its programs through consortium agreements with other institutions studying the safe transportation of hazardous substances. Research topics should include locality-specific investigations of marine habitat and the impact of oil, as well as prevention policy and response technology. The

TITLE VII—RESEARCH AND DEVELOPMENT

SEC. 7001. OIL POLLUTION RESEARCH AND DEVELOPMENT PROGRAM.

(a) INTERAGENCY COORDINATING COMMITTEE ON OIL POLLUTION RESEARCH.—

(1) **ESTABLISHMENT.**—There is established an Interagency Coordinating Committee on Oil Pollution Research (hereafter in this section referred to as the "Interagency Committee").

(2) **PURPOSES.**—The Interagency Committee shall coordinate a comprehensive program of oil pollution research, development, and demonstration among the Federal agencies, in cooperation and coordination with industry, universities, research institutions, State governments, and other nations, as appropriate, and shall foster cost-effective research mechanisms, including the joint funding of research.

(3) **MEMBERSHIP.**—The Interagency Committee shall include representatives from the Department of Commerce (including the National Oceanic and Atmospheric Administration and the National Institute of Standards and Technology), the Department of Energy, the Department of the Interior (including the Minerals Management Service and the United States

Fish and Wildlife Service), the Department of Transportation (including the United States Coast Guard and the Maritime Administration), the Department of Defense (including the Army Corps of Engineers and the Navy), the Environmental Protection Agency, and the National Aeronautics and Space Administration, as well as such other Federal agencies as the President may designate. The President shall designate a chairman of the Interagency Committee from among its members.

(4) **OIL POLLUTION RESEARCH PLAN.**—(A) Within 120 days after the date of enactment of this Act, the Interagency Committee shall submit to Congress a plan for the implementation of the research aspects of the oil pollution research and development programs established pursuant to subsection (b). The research plan shall—

- (i) identify agency roles and responsibilities;
- (ii) assess the current status of knowledge on oil pollution technologies and effects;
- (iii) identify significant research gaps and priorities;
- (iv) review responses to oil discharges over the past 20 years, identify major technological deficiencies in those responses, and establish re-

search priorities and goals for technology development to address those deficiencies;

(v) estimate the resources needed to conduct the oil pollution research and development program established pursuant to subsection (b), timetables for completing research tasks, and, to the extent feasible, expected industry, university, research institution, State government, and foreign nation participation, as appropriate, in the research and development program including joint funding mechanisms; and

(vi) identify a lead agency for carrying out effects research under subsection (b)(4).

(B) The agency which is represented by the Chairman of the Interagency Committee shall contract with the National Academy of Sciences to—

(i) provide advice and guidance in the preparation and development of the research plan; and

(ii) assess the adequacy of the plan as submitted, and submit a report to Congress on the conclusions of such assessment.

The National Institute of Standards and Technology shall provide the Interagency Committee with advice and guidance on issues relating to quality assurance

and standards and measurements relating to its activities under this section.

(b) OIL POLLUTION RESEARCH AND DEVELOPMENT PROGRAM.

(1) ESTABLISHMENT.—The Interagency Committee shall coordinate the establishment, by the agencies represented on the Interagency Committee, of a program for conducting oil pollution research and development, as provided in this subsection.

(2) INNOVATIVE OIL POLLUTION TECHNOLOGY.—The program established under this subsection shall provide for research, development, and demonstration of new or improved technologies which are effective in preventing or mitigating oil discharges under normal and harsh environmental conditions including strong winds and water currents, and which protect the environment, including—

(A) development of improved designs for vessels and facilities, and improved operational practices;

(B) research, development, and demonstration of improved technologies to measure the ullage of a vessel, prevent discharges from tank vents, prevent discharges during lightering and bunkering operations, contain discharges on the

deck of a vessel, prevent discharges through the use of vacuums in tanks, and otherwise contain discharges of oil from vessels and facilities;

(C) research, development, and demonstration of new or improved systems of mechanical, chemical, biological, and other methods (including the use of dispersants, solvents, and bioremediation) for the recovery, removal, and disposal of oil, including that which has migrated into substrate environments;

(D) research, in consultation with the National Response Team, to improve industry's and government's ability to quickly and effectively remove an oil discharge, including research to improve information systems for decisionmaking;

(E) development of technologies and methods to protect public health and safety from oil discharges, including the population directly exposed to an oil discharge;

(F) development of technologies, methods, and standards for protecting removal personnel, including training, adequate supervision, protective equipment, maximum exposure limits, and decontamination procedures,

(i) research and development of methods to restore and rehabilitate natural resources damaged by oil discharges;

(ii) a demonstration to evaluate the relative effectiveness and environmental impacts of bioremediation technologies, including comparisons between bioremediation techniques that rely on the introduction of microorganisms and those that rely on the enhancement of indigenous microorganisms;

(f) research on the environmental effects of the use of technologies to prevent or mitigate oil discharges, and

(1) research and development of technologies capable of providing temporary storage of oil that would otherwise have to be discharged into the environment.

(3) OIL POLLUTION TECHNOLOGY EVALUATION. The program established under this subsection shall provide for oil pollution prevention and mitigation technology evaluation, including—

(A) the evaluation and testing of technologies developed independently of the research and development program established under this subsection,

(B) the establishment, where appropriate, of standards and testing protocols traceable to national standards to measure the performance of oil pollution prevention or mitigation technologies; and

(C) the use, where appropriate, of controlled field testing to evaluate real-world application of oil discharge prevention or mitigation technologies.

(4) OIL POLLUTION EFFECTS RESEARCH. - The program established under this subsection shall provide for research on the environmental effects of oil discharges, including--

(A) the development of improved models and capabilities for predicting the effects of oil discharges and the fate and transport of such oil;

(B) the development of methods, including economic methods, to assess damages to natural resources resulting from oil discharges;

(C) the identification and mapping of environmentally sensitive areas at particular risk to oil discharges;

(D) the collection of environmental baseline

and the determination of poten-

tial effects of oil discharges, including data on chronic oil discharges; and

(E) the development of plans for long term monitoring of environmental effects in those areas, to be implemented in the event of a major oil discharge.

(5) SPECIAL STUDIES.--(A) As part of the program established under this subsection, the Secretary of Commerce, in consultation with the Administrator of the Environmental Protection Agency, shall undertake--

(i) a 10-year comprehensive monitoring and research program to determine the long-term environmental effects, including effects on the diverse marine and estuarine habitats and living marine resources, of the oil discharges by the EXXON VALDEZ into Prince William Sound and the Gulf of Alaska; and

(ii) a 5-year comprehensive monitoring and research program to determine the environmental effects of the oil discharges by the WORLD PRODIGY into Narragansett Bay, by the RACHEL B into the Houston Ship Channel, and by the PRESIDENTE RIVERA into the Dela-

(B) The monitoring and research program under subparagraph (A)(i) shall include consideration of methods and technologies for preventing, removing, and mitigating the effects of oil discharges in arctic and subarctic marine environments. The results of the program shall be applied to the development of improved methods (including contingency planning) for protecting arctic and subarctic marine and estuarine environments from all risks of oil transportation, including oil discharges.

(C) The Secretary of Commerce may recoup the costs of the monitoring and research program under subparagraph (A)(i) from the owners and operators of the EXXON VALDEZ, to the extent that these costs are directly related to the oil discharges by the EXXON VALDEZ into Prince William Sound and the Gulf of Alaska.

(G) MARINE SIMULATION RESEARCH.—The program established under this subsection shall include research on the greater use and application of geographic and vessel response simulation models, including the development of additional data bases and updating of existing data bases using, among others, the resources of the National Maritime Research Center. It shall include research and vessel simulations for—

(A) contingency plan evaluation and amendment;

(B) removal and strike team training;

(C) tank vessel personnel training; and

(D) those geographic areas where there is a significant likelihood of a major oil spill.

(c) GRANTS.—In carrying out the research and development program established under subsection (b), the agencies represented on the Interagency Committee may enter into contracts and cooperative agreements and make grants to universities, research institutions, and other persons.

(d) INTERNATIONAL COOPERATION.—In accordance with the research plan submitted under subsection (a)(4), the Interagency Committee shall coordinate and cooperate with other nations and foreign research entities in conducting oil pollution research and development and demonstration activities, including controlled field tests of oil discharges.

(e) ANNUAL REPORTS.—The Chairman of the Interagency Committee shall submit to Congress at the close of each fiscal year a report on the activities carried out under subsections (a) through (c) of this section in the preceding fiscal year, and on activities proposed to be carried out under subsections (a) through (c) of this section in the current fiscal year.

1 (D) REGIONAL RESEARCH CENTERS.--(1) As part of
2 the program established under subsection (b), a minimum of
3 six regional research centers shall be established through
4 competitive grants to universities or other research institu-
5 tions, or groups of universities or research institutions.

6 (2) The responsibilities of each regional research center
7 established under this subsection shall include the design and
8 implementation of a program for addressing one or more of
9 the various aspects of oil pollution research and development,
10 including prevention, removal, mitigation, and the effects of
11 discharged oil on the environment. Such research and devel-
12 opment program shall, as appropriate, include the following
13 elements:

14 (A) Projections and improved understanding of po-
15 tential patterns and timing of a given discharge's dis-
16 persal, taking into account the size and rate of the dis-
17 charge, time of year, weather and ocean flows, and cir-
18 culation patterns.

19 (B) Projections and improved understanding of the
20 effects of unique meteorology of the region on the con-
21 centration and distribution in the environment of oil

1 (D) Assessment of the physiochemical interactions
2 between discharged oil and water, and of the distribu-
3 tion of oil pollution in water and sediment at various
4 temperatures, and other conditions.

5 (E) Research on the effects of oil on flora and
6 fauna, including the effects of location, dynamics, and
7 type of oil discharged.

8 (F) The design of protocols to be followed to
9 quantify ground water contamination associated with
10 discharges, including an assessment of the potential
11 impact on drinking water supplies.

12 (3) At least one of the regional research centers estab-
13 lished under this subsection shall represent and be located in
14 each of the following 6 regions of the United States:

15 (A) The tropical and subtropical coastal environ-
16 ments of Florida and the coastal environment of the
17 Gulf Coast.

18 (B) Atlantic temperate coastal environments.

19 (C) Pacific temperate coastal environments.

20 (D) The Alaskan coastline and other Arctic and
21 subarctic environments.

1 Interagency Committee for a grant under this subsection.
2 Such application shall be in such form and contain such information as the Chairman may require.

4 (5) The Interagency Committee shall select grant recipients under this subsection and shall designate the appropriate agency represented on the Interagency Committee to administer each grant. The grant recipients shall be selected on the basis of the following criteria:

9 (A) There is available to the applicant for carrying out this subsection demonstrated research resources.

12 (B) The applicant shall demonstrate the capability of providing leadership in making national and regional research and development contributions to preventing, removing, mitigating, and assessing the environmental effects of oil discharges, as appropriate.

17 (C) The applicant shall demonstrate the ability and willingness to support ongoing oil discharge prevention, removal, mitigation, and environmental effects research and development activities, as appropriate, with budgeted institutional funds of at least \$100,000 per year.

23 (D) The applicant shall have an interdisciplinary oil pollution prevention, removal, mitigation, and environmental effects research and development activities, as appropriate,

1 vention, removal, mitigation, and environmental effects research and development, as appropriate.

3 (E) The projects which the applicant proposes to carry out under the grant are necessary and appropriate and would further the objectives of the research and development program established under subsection (b).

8 (6) Grants provided under this subsection shall provide not more than 80 percent of the costs of establishing and operating the regional research center and related research and development activities carried out by the grant recipient.

12 (7) No funds made available to carry out this subsection may be used for the acquisition of real property (including buildings) or construction of any building.

15 (8) The Interagency Committee shall allocate funds made available to carry out this subsection equitably among the regional research centers. The Interagency Committee, in awarding grants for the regional research centers, shall attempt to achieve a national balance among the various aspects of oil pollution research and development, including prevention, removal, mitigation, and the effects of discharged oil on the environment.

23 (9) Each regional research center shall coordinate its oil pollution prevention, removal, mitigation, and environmental effects research and development activities, as appropriate,

1, with the Interagency Committee and the agencies represented on the Interagency Committee.

3 (10) The applicant shall disseminate results of oil pollution prevention, removal, mitigation, and environmental effects research and development, as appropriate, through technology transfer training, and other educational programs.

8 (g) FUNDING. Not to exceed \$28,000,000 of amounts in the Fund shall be available annually, without fiscal year limitation, to carry out this section. For each of fiscal years 1990, 1991, 1992, 1993, and 1994, \$1,000,000 of such amount shall be available for each regional center established under subsection (f).

14 TITLE VIII—TRANS-ALASKA 15 PIPELINE SYSTEM

16 SEC. 8001. SHORT TITLE.

17 This title may be cited as the "Trans-Alaska Pipeline System Reform Act of 1989".

19 SEC. 8002. REFERENCES TO TRANS-ALASKA PIPELINE 20 AUTHORIZATION ACT.

21 Except as otherwise expressly provided, whenever in this title an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other

1 provision of the Trans-Alaska Pipeline Authorization Act (43 U.S.C. 1651-1655).

3 Subtitle A—Improvements to Trans- 4 Alaska Pipeline System

5 SEC. 8101. LIABILITY WITHIN THE STATE OF ALASKA AND 6 CLEANUP EFFORTS.

7 (a) CAUSE OF ACCIDENT.—Section 204(a)(1) of the Trans-Alaska Pipeline Authorization Act (43 U.S.C. 1653(a)(1)) is amended by striking out "caused by" in the first sentence and inserting in lieu thereof "caused solely by".

11 (b) REMOVAL OF LIMITATION.—Section 204(a) of the Act (43 U.S.C. 1653(a)) is amended—

13 (1) by striking out paragraph (2); and

14 (2) by redesignating paragraphs (3), (4), and (5) as paragraphs (2), (3), and (4), respectively.

16 (c) CLEANUP EFFORTS.—Section 204(b) of the Act (43 U.S.C. 1653(b)) is amended in the first sentence—

18 (1) by inserting after "any area" the following:
19 "in the State of Alaska";

20 (2) by inserting after "any activities" the following: "related to the trans-Alaska pipeline system, including operation of the terminal,"; and

23 (3) by inserting after "other Federal" the first place it appears the following: "or State".

ATTACHMENT #17

—SENATE COUNTER OFFER—

March 6, 1990

3/13/9

Delete Sections 305 and 309 of the Senate bill.

Maintain Sections 354 and 355 of the Senate bill.

TITLE VII--RESEARCH AND DEVELOPMENT

**SEC. 7001. OIL POLLUTION RESEARCH AND DEVELOPMENT
PROGRAM.**

**(a) INTERAGENCY COORDINATING COMMITTEE ON OIL POLLUTION
RESEARCH.--**

(1) ESTABLISHMENT.--There is established an Interagency Coordinating Committee on Oil Pollution Research hereafter in this section referred to as the "Interagency Committee").

(2) PURPOSES --The Interagency Committee shall coordinate a comprehensive program of oil pollution research, technology development, and demonstration among the federal agencies, in cooperation and coordination with industry, universities, research institutions, state governments, and other nations, as appropriate and shall foster cost-effective research mechanisms including the joint funding of research.

(3) MEMBERSHIP.--The Interagency Committee shall include representatives from the Department of Commerce (including the National Oceanic and Atmospheric Administration and the National Institute of Standards

1 and Technology, the Department of Energy, the
2 Department of the Interior (including the Minerals
3 Management Service and the United States Fish and
4 Wildlife Service), the Department of Transportation
5 (including the Coast Guard and the Maritime
6 Administration), the Department of Defense (including
7 the Army Corps of Engineers and the Navy), the
8 Environmental Protection Agency, and the National
9 Aeronautics and Space Administration, as well as such
10 other Federal agencies as the President may designate.
11 The representative of the Department of Transportation
12 shall serve as chairman.

13 (b) OIL POLLUTION RESEARCH & TECHNOLOGY PLAN.--Within
14 180 days after the date of enactment of this Act, the
15 Interagency Committee shall submit to Congress a plan
16 outlining goals and priorities for the oil pollution research
17 and technology development program established pursuant to
18 subsection (a). The research plan shall--

19 1. identify agency roles and responsibilities;

20 2. assess the current status of knowledge on oil
21 pollution response and mitigation technologies;

22 3. assess the current status of knowledge on oil
23 pollution impacts on the aquatic environment, including
24 fish, shellfish, and wildlife;

1 (4) identify significant gaps in research on oil
2 pollution: response and mitigation technologies and oil
3 pollution impacts on the aquatic environment;

4 (5) establish priorities and goals for oil
5 pollution response and mitigation technology development
6 and for research of oil pollution effects on the aquatic
7 environment; and

8 (6) estimate the resources needed to conduct the
9 oil pollution research and technology development
10 program established pursuant to subsection (c), and
11 timetables for completing such tasks.

12 (c) OIL POLLUTION RESEARCH AND DEVELOPMENT PROGRAM.--

13 (1) ESTABLISHMENT.--The Interagency Committee shall
14 coordinate the establishment by the agencies
15 represented on the Interagency Committee, of a program,
16 consistent with the oil pollution research plan, for
17 conducting oil pollution research and technology
18 development, as provided in this subsection.

19 (2) INNOVATIVE OIL POLLUTION TECHNOLOGY.--The
20 program established under this subsection shall provide
21 for, at a minimum, research, development, and
22 demonstration of new or improved technologies,
23 including--

1 (A) development of improved designs for
2 vessels, facilities, and equipment, and improved
3 operational practices;

4 (B) the demonstration of a satellite based,
5 dependent surveillance vessel traffic system to
6 evaluate the utility of such system in reducing the
7 risk of oil spills from vessel collisions and
8 groundings in confined waters.

9 (C) research, development, and demonstration
10 of new or improved systems of mechanical, chemical,
11 biological, and other methods (including the use of
12 dispersants, solvents, and bioremediation) for the
13 recovery, removal, and disposal of oil, including
14 assessment of this impact of such systems on the
15 aquatic environment;

16 (D) research, in consultation with the
17 National Response Team, to improve industry's and
18 government's ability to quickly and effectively
19 remove an oil discharge, including research to
20 improve information systems for decisionmakers;

21 (E) development of technologies, methods, and
22 standards for protecting removal personnel,
23 including training, adequate supervision,
24 protective equipment, maximum exposure limits, and
25 decontamination procedures;

(F) research and development of methods to restore and rehabilitate natural resources damaged by oil discharges; and

(G) research to evaluate the relative effectiveness and environmental impacts of bioremediation technologies.

(3) OIL POLLUTION TECHNOLOGY EVALUATION.--The program established under this subsection shall provide for -- pollution prevention and mitigation technology evaluation, including--

(A) the evaluation and testing of technologies developed independently of the research and development program established under this subsection;

B) the establishment, where appropriate, of analysis and testing protocols traceable to national standards to measure the performance of oil pollution prevention or mitigation technologies; and

C) the use, where appropriate, of controlled field testing to evaluate application of oil discharge prevention or mitigation technologies.

(4) OIL POLLUTION EFFECTS RESEARCH.--

(A) The program established under this subsection shall provide for research on the

1 environmental effects of oil discharges,
2 including--

3 (i) the development of improved models
4 and capabilities for predicting the
5 environmental effects of oil discharges and
6 the, persistence, fate and transport of such
7 oil;

8 (ii) the impact of oil pollution on water
9 quality, including aquatic resources in the
10 water column;

11 (iii) the impact of oil pollution on
12 sediment quality, including benthic organisms;

13 (iv, the development of methods,
14 including economic methods, to assess damages
15 to natural resources resulting from oil
16 discharges.

17 3. Research conducted by, or through, the
18 U.S. Fish and Wildlife Service shall be directed
19 and originated by the National Wetland Research
20 Center.

21 (C) Research conducted pursuant to this
22 paragraph shall identify differing geographic
23 areas

24 (d) NATIONAL GRANT PROGRAM.--

1 (1) Carrying out the research and development
2 program established under subsection (c), the agencies
3 represented on the Interagency Committee may enter into
4 contracts and cooperative agreements with, and make
5 grants to universities, research institutions, and other
6 persons. Such contracts, cooperative agreements, or
7 grants shall address research and technology priorities
8 set forth in the oil pollution research plan.

9 (2) The Interagency Committee shall select grant
10 recipients under this subsection and shall designate the
11 appropriate agency represented on the Interagency
12 Committee to administer each grant. The grant
13 recipient shall be selected on the basis of the
14 following criteria:

15 (A) The projects which the applicant proposes
16 to carry out under the grant are necessary and
17 appropriate and would further the objectives of the
18 research and development plan established under
19 subsection (b).

20 (B) There is available to the applicant for
21 carrying out this subsection demonstrated research
22 resources.

23 (C) The applicant shall demonstrate the
24 capability of providing leadership in making
25 national and regional research and development

1 contributions to preventing, removing, mitigating,
2 and assessing the environmental effects of oil
3 discharges, as appropriate.

4 (3) No funds made available to carry out this
5 subsection may be used for the acquisition of real
6 property (including buildings) or construction of any
7 building.

8 (e) INTERNATIONAL COOPERATION.--In accordance with the
9 research plan submitted under subsection (b), the Interagency
10 Committee shall coordinate and cooperate with other nations
11 and foreign research entities in conducting oil pollution
12 research and development and demonstration activities,
13 including controlled field tests of oil discharges.

14 (f) ANNUAL REPORTS.--The Chairman of the Interagency
15 Committee shall submit to Congress immediately after each
16 fiscal year a report on the activities carried out under
17 subsections (a) through (e) of this section in such fiscal
18 year, and on activities proposed to be carried out under
19 subsections (a) through (e) of this section in the current
20 fiscal year.

21 (g) FUNDING.--Not to exceed \$25,000,000 of amounts in
22 the Fund shall be available annually, without fiscal year
23 limitation, to carry out this section.

Sec. 5001. (a) ESTABLISHMENT OF INSTITUTE -- The Secretary of Commerce shall provide for the establishment of a Prince William Sound Oil Spill Recovery Institute (hereafter in this section referred to as the Institute) to be administered by the Secretary of Commerce through the Prince William Sound Science and Technology Institute and located in Cordova, Alaska.

(b) FUNCTIONS -- The Institute shall conduct research and carry out educational and demonstration projects designed to --

(1) identify and develop the best available techniques, equipment, and materials for dealing with oil spills in the arctic and subarctic marine environment; and

(2) complement Federal and State damage assessment efforts and determine, document, assess, and understand the long-term effects of the EXXON VALDEZ OIL SPILL on the natural resources of Prince William Sound and its adjacent waters (as generally depicted on the map entitled "EXXON VALDEZ oil spill dated March, 1990"), the environment, the economy, and the lifestyle and well-being of the people who are dependent upon them. The Institute shall not conduct studies or make recommendations regarding any matter which is not directly related to the EXXON VALDEZ oil spill or the effects thereof.

(c) ADVISORY BOARD -- (1) The policies of the Institute shall be determined by the Advisory Board composed of --

(A) one representative appointed by each of the Commissioners of Fish and Game, Environmental Conservation, Natural Resources, and Commerce and Economic Development of the State of Alaska, all of whom shall be State employees;

(B) one representative appointed by each of the Secretaries of Commerce, the Interior, Agriculture, Transportation, and the Navy, and the Administrator of the Environmental Protection Agency, all of whom shall be Federal employees;

(C) four residents from communities in Alaska that were affected by the EXXON VALDEZ oil spill, at least two of whom must be from communities located in Prince William Sound, who are knowledgeable about fisheries, other local industries, the marine environment, wildlife, public health, safety, or education. The Secretary shall appoint residents to serve terms of two years each from a list of eight qualified individuals submitted by the Governor of the State of Alaska based on recommendations made by the governing body of each affected community. Each affected community may submit the names of two qualified individuals for

the Governor's consideration. No more than five of the eight qualified persons recommended by the Governor shall be members of the same political party.

(D) three Alaska Natives who represent Native entities affected by the EXXON VALDEZ oil spill, at least one of whom represents an entity located in Prince William Sound, to serve terms of two years each from a list of six qualified individuals submitted by the Alaska Federation of Natives.

(E) one non-voting representative appointed by the Prince William Sound Science and Technology Institute.

(2) The representative of the Secretary of Commerce shall serve as Chairman of the Advisory Board.

(3) Such policies shall include the conduct and support, through contracts and grants, on a nationally competitive basis, of the research, projects, and studies to be supported by the Institute in accordance with the purposes of this section.

(d) SCIENTIFIC AND TECHNICAL COMMITTEE --

(1) The Advisory Board shall establish a Scientific and Technical Committee, composed of specialists in matters relating to oil spill containment and cleanup technology, arctic and subarctic marine ecology, and the living resources and socioeconomics of Prince William Sound and its adjacent waters (as generally depicted on the map entitled "EXXON VALDEZ oil spill dated March, 1990"), from the University of Alaska, the Prince William Sound Science and Technology Institute, and elsewhere in the academic community.

(2) The Scientific and Technical Committee shall provide such advice to the Advisory Board as the Board shall request, including recommendations regarding the conduct and support of research, projects, and studies in accordance with the purposes of this section. The Board shall not request and the Committee shall not provide any advice which is not directly related to the EXXON VALDEZ oil spill or the effects thereof.

(e) DIRECTOR -- The Institute shall be administered by a Director who shall be appointed by the Secretary of Commerce. The Prince William Sound Science and Technology Institute, the Advisory Board, and the Scientific and Technical Committee may each submit independent recommendations for the Secretary's consideration. The Director may hire such staff and incur such expenses on behalf of the Institute as are authorized by the Advisory Board.

EVALUATION -- The Secretary of Commerce is authorized to conduct an ongoing evaluation of the activities of the Institute to ensure that funds received by the Institute are used in a manner consistent with the provisions of this section.

(g) **AUDIT** -- The Comptroller General of the United States, and any of his or her duly authorized representatives, shall have access, for purposes of audit and examination, to any books, documents, papers, and records of the Institute and its administering agency that are pertinent to the funds received and expended by the Institute and its administering agency.

(h) **STATUS OF EMPLOYEES** -- Employees of the Institute shall not, by reason of such employment, be considered to be employees of the Federal Government for any purpose.

(j) **TERMINATION** -- The authority for establishment, operation, and funding of the Institute shall terminate ten years after the date of enactment of this Act.

(k) **USE OF FUNDS** -- No funds made available to carry out this subsection may be used to initiate litigation. No funds made available to carry out this subsection may be used for the acquisition of real property (including buildings) or construction of any building. No more than 20 percent of available funds may be used to lease necessary facilities and to administer the Institute. None of the funds authorized by this section shall be used for any purpose other than those specified in paragraph (b) of this section related to the EXXON VALDEZ oil spill and the effects thereof.

(5) Certification is not to be construed as approval by the lead agency of response actions undertaken by that organization. Certification does not authorize that organization to act on behalf of, or as an agent for, the lead agency.

(6) Certification may be revoked at the discretion of the Administrator for failure to comply with this Plan or the requirements of CERCLA.

(d) **Releases from Liability.** Implementation of response measures by responsible parties, certified organizations, or other persons does not release those parties from liability.

Subpart G—Trustees for Natural Resources

SOURCE: 50 FR 47918, Nov. 20, 1985, unless otherwise noted.

§ 300.72 Designation of Federal trustees.

When natural resources are lost or damaged as a result of a discharge of oil or a release of a hazardous substance, the following officials are designated to act as Federal trustees pursuant to section 111(h)(1) of CERCLA and section 311(d)(5) of the Clean Water Act for purposes of sections 111(h)(1), 111(b), and 107(f) of CERCLA and section 311(f)(5) of the Clean Water Act:

(a)(1) **Natural resource loss.** Damage to resources of any kind located on, over, or under land subject to the management or protection of a Federal land managing agency, other than land or resources in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) **Trustee.** The head of the Federal land managing agency, or the head of any other single Federal entity designated by it to act as trustee for a specific resource.

(b)(1) **Natural resource loss.** Damage to fixed or non-fixed resources subject to the management or protection of a Federal agency, other than land or resources in or under United States waters that are navigable by deep draft vessels, including waters of the

contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) **Trustee.** The head of the Federal agency authorized to manage or protect these resources by statute, or the head of any other single entity designated by it to act as trustee for a specific resource.

(c)(1) **Natural resource loss.** Damage to a resource of any kind subject to the management or protection of a Federal agency and lying in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence, and upland areas serving as habitat for marine mammals and other species subject to the protective jurisdiction of NOAA.

(2) **Trustee.** The Secretary of Commerce or the head of any other single Federal entity designated by it to act as trustee for a specific resource; provided, however, that where resources are subject to the statutory authorities and jurisdictions of the Secretaries of the Departments of Commerce or the Interior, they shall act as co-trustees.

(d)(1) **Natural resource loss.** Damages to natural resources protected by treaty (or other authority pertaining to Native American tribes) or located on lands held by the United States in trust for Native American communities or individuals.

(2) **Trustee.** The Secretary of the Department of the Interior, or the head of any other single Federal entity designated by it to act as trustee for specific resources.

§ 300.73 State trustees.

States may act as trustee for natural resources within the boundary of a State or belonging to, managed by, controlled by, or appertaining to such State as provided by CERCLA.

§ 300.74 Responsibilities of trustees.

(a) The Federal trustees for natural resources shall be responsible for assessing damages to the resource in ac-

cordance with regulations promulgated under section 301(c) of CERCLA, seeking recovery for the costs of assessment and for the losses from the person responsible or from the Fund, and devising and carrying out a plan for restoration, rehabilitation, or replacement or acquisition of equivalent natural resources pursuant to CERCLA.

(b) The trustee may, upon notification, take the following actions as appropriate:

(1) Request that the lead agency issue an administrative order or pursue judicial relief against the person responsible for the discharge.

(2) *Substitute state testing protocol for toxicity*

(3) 107(a)

(4) for injury, or loss of a natural resource, as authorized by CERCLA section 111. (When this option is selected, a plan for restoration, rehabilitation, or replacement or acquisition of equivalent natural resources must be adopted pursuant to section 111(f) of CERCLA.)

(c) Where there are multiple trustees, because of co-existing or contiguous natural resources or concurrent jurisdictions, they shall coordinate and cooperate in carrying out these responsibilities.

Subpart H—Use of Dispersants and Other Chemicals

SOURCE: 49 FR 29197, July 18, 1984, unless otherwise noted.

§ 300.81 General.

(a) Section 311(c)(2)(G) of the Clean Water Act requires that EPA prepare a schedule of dispersants and other chemicals, if any, that may be used in carrying out the plan. This subpart makes provisions for such a schedule.

(b) This subpart applies to the navigable waters of the United States and adjoining shorelines, the waters of the

contiguous zone, and the high seas beyond the contiguous zone in connection with activities under the Continental Shelf Lands Act, as amended, under the Deep Water Port Act of 1974, or activities that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fish Conservation and Management Act of 1976).

(c) This subpart applies to the use of chemical agents or other materials as hereinafter defined that are used to remove or control oil discharges.

§ 300.82 Definitions.

For the purposes of this subpart:

(a) **Chemical agents** are, in general, those elements, compounds, or mixtures that coagulate, disperse, dilute, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, cause to coagulate, entrap, fix, make the material more rigid or viscous, or otherwise facilitate the mitigation of serious effects or removal of the pollutant from the water.

(b) **Dispersants** are those chemical agents that emulsify, disperse, or dilute oil into the water column to promote the surface spreading of oil to facilitate dispersal of the oil into the water column.

(c) **Surface collecting agents** are those chemical agents that form a surface film to control the layer thickness of oil.

(d) **Biological additives** are biological cultures, enzymes, or other additives that are deliberately introduced into an oil discharge for a specific purpose of encouraging degradation to mitigate the effects of the discharge.

(e) **Burning agents** are those materials that, through physical or chemical means, improve the combustibility of the materials to which they are applied.

(f) **Sinking agents** are those materials applied to oil discharges to float pollutants below the surface.

(g) **Navigable water** means the waters of the United States, including the

the ball of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

§ 300.83 NCP Product Schedule.

(a) *Oil discharges.* (1) EPA shall maintain a schedule of dispersants and other chemical or biological products that may be authorized for use on oil discharges in accordance with the procedures set forth in § 300.84 of this part. This schedule, called the NCP Product Schedule, may be obtained from the Emergency Response Division, U.S. Environmental Protection Agency, Washington, DC 20460. Phone (202) 382-2196.

(2) Products may be added to the NCP Product Schedule by the process specified in § 300.85.

(b) *Hazardous substance releases.* (Reserved)

§ 300.84 Authorization of use.

(a) The OSC, with the concurrence of the EPA representative to the RRT and the concurrence of the States with jurisdiction over the navigable waters polluted by the oil discharge, may authorize the use of dispersants, surface collecting agents, and biological additives on the oil discharge. Provided that the dispersants, surface collecting agents, or additives are on the NCP Product Schedule. The OSC shall consult with other appropriate Federal agencies as practicable when considering the use of such products.

(b) The OSC, with the concurrence of the EPA representative to the RRT and the concurrence of the States with jurisdiction over the navigable waters polluted by the oil discharge, may authorize the use of burning agents on a case-by-case basis. The OSC shall consult with other appropriate Federal agencies as practicable when considering the use of such products.

(c) The OSC may authorize the use of any dispersant, surface collecting agent, other chemical agent, burning agent, or biological additive (including products not on the NCP Product

currency of the EPA representative to the RRT or the State with jurisdiction over the navigable waters polluted by the oil discharge, when, in the judgment of the OSC, the use of the product is necessary to prevent or substantially reduce a hazard to human life. The OSC is to inform the EPA RRT representative and the affected States of the use of a product as soon as possible and, pursuant to the provisions in paragraph (a) of this section, obtain their concurrence for its continued use once the threat to human life has subsided.

(d) Sinking agents shall not be authorized for application to oil discharges.

(e) RRTs shall, as appropriate, consider, as part of their planning activities, the appropriateness of using the dispersants, surface collecting agents, or biological additives listed on the NCP Product Schedule, and the appropriateness of using burning agents. Regional contingency plans shall, as appropriate, address the use of such products in specific contexts. If the RRT and the States with jurisdiction over the waters of the area to which a plan applies approve in advance the use of certain products as described in the plan, the OSC may authorize the use of the products without obtaining the concurrence of the EPA representative to the RRT or of the States and without consultation with other appropriate Federal agencies.

150 FR 47979, Nov. 20, 1985

§ 300.85 Data requirements.

(a) *Dispersants.* (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures, to include optimum ranges as well as temperatures that will cause phase separations, chemical

effectiveness of the product.

(6) Shelf life.

(8) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Dispersant Toxicity—Use standard toxicity test methods described in Appendix C.

(8) Effectiveness—Use standard effectiveness test methods described in Appendix C. Manufacturers are also encouraged to provide data on product performance under conditions other than those captured by these tests.

(9) Flash Point—Select appropriate method from the following: ASTM—D 56-77; ASTM—D 92-78; ASTM—D 93-77; ASTM—D 1310-72; ASTM—D 3278-78.

(10) Pour Point—Use ASTM—D 97-66.

(11) Viscosity—Use ASTM—D 445-74.

(12) Specific Gravity—Use ASTM—D 1298-67.

(13) pH—Use ASTM—D 1293-78.

(14) Dispersing Agent Components. Itemize by chemical name and percentage by weight each component of the total formulation. The percentages will include maximum, minimum, and average weights in order to reflect quality control variations in manufacture or formulation. Identify at least the following major components: surface active agents; solvents; additives.

(15) Heavy Metals, Cyanide, and Chlorinated Hydrocarbons. Using standard test procedures, state the concentrations or upper limits of the following materials:

(1) Arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, plus any other metals that may be reasonably expected to be in the sample. Atomic absorption methods should be used and the detailed analytical methods and sample preparation shall be fully described.

1981 Annual Book of ASTM Standards, American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

procedures should be used.

(iii) Chlorinated hydrocarbons. Gas chromatography should be used and the detailed analytical methods and sample preparation shall be fully described.

(16) The technical product data submission shall include the identity of the laboratory that performed the required tests, the qualifications of the laboratory staff (including professional biographical information for individuals responsible for any tests), and laboratory experience with similar tests. Laboratories performing toxicity tests for dispersant toxicity must demonstrate previous toxicity test experience in order for their results to be accepted. It is the responsibility of the submitter to select competent analytical laboratories based on the guidelines contained herein. EPA reserves the right to refuse to accept a submission of technical product data because of lack of qualification of the analytical laboratory, significant variance between submitted data and any laboratory confirmation performed by EPA, or other circumstances that would result in inadequate or inaccurate information on the dispersing agent.

(b) *Surface collecting agents.* (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures, to include optimum ranges as well as temperatures that will cause phase separations, chemical changes, or other alterations to the effectiveness of the product.

(5) Shelf life.

(6) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Toxicity—Use standard toxicity test methods described in Appendix C.

method from the following: ASTM-D 56-77; ASTM-D 92-78; ASTM-D 91-77; ASTM-D 1310-72; ASTM-D 3278-78.

(9) Pour Point—Use ASTM-D 9-66.

(10) Viscosity—Use ASTM-D 44-74.

(11) Specific Gravity—Use ASTM-D 1298-67.

(12) pH—Use ASTM-D 1298-78.

(13) Test to Distinguish Between Surface Collection Agents and Other Chemical Agents.

(i) Method Summary—Five (5) milliliters of the chemical under test are mixed with ninety-five (95) milliliters of distilled water and allowed to stand undisturbed for one hour. Then the volume of the upper phase is determined to the nearest one (1) milliliter.

(ii) Apparatus.

(A) Mixing Cylinder: 100 milliliter subdivisions and fitted with a glass stopper.

(B) Pipettes: Volumetric pipette, 5.0 milliliter.

(C) Timers.

(iii) Procedure—Add 95 milliliters of distilled water at 22 °C + 3 °C to a 100 milliliter mixing cylinder. To the surface of the water in the mixing cylinder, add 5.0 milliliters of the chemical under test. Insert the stopper and invert the cylinder five (5) times in 10 seconds. Set upright for one (1) hour at 22 °C + 3 °C and then measure the chemical layer at the surface of the water. The major portions of the chemical added (75 percent) should be at the water surface as a separate and easily distinguished layer.

(14) Surface Collecting Agent Components. Itemize by chemical name and percentage by weight each component of the total formulation. The percentages should include maximum, minimum, and average weights in order to reflect quality control variations in manufacture or formulation. Identify at least the following major components: surface active agents; solvents; additives.

¹1981 Annual Book of ASTM Standards, American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(15) Heavy Metals, Cyanide, and Chlorinated Hydrocarbons. Follow specifications in § 300.85(a)(15).

(16) Analytical Laboratory Requirements for Technical Product Data. Follow specifications in § 300.85(a)(16).

(c) Biological additives. (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures.

(5) Shelf life.

(6) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Statements and supporting data on the expected effectiveness of the additive, including degradation rates, the test conditions, and data on effectiveness.

(8) For microbiological cultures furnish the following information:

(i) Listing of all microorganisms by species.

(ii) Percentage of each species in the composition of the additive.

(iii) Optimum pH, temperature, and salinity ranges for use of the additive, and maximum and minimum pH, temperature, and salinity levels above or below which the effectiveness of the additive is reduced to half its optimum capacity.

(iv) Special nutrient requirements, if any.

(v) Separate listing of the following and test methods for such determinations: Salmonella, fecal coliform, Shigella, Staphylococcus Coagulase positive, and Beta Hemolytic Streptococci.

(9) For enzyme additives furnish the following information:

(i) Enzyme name(s).

(ii) International Union of Biochemistry (I.U.B.) number(s).

(iii) Source of the enzyme.

(iv) Units.

(v) Specific activity.

(vi) Optimum pH, temperature, and salinity ranges for use of the additive, and maximum and minimum pH, temperature, and salinity levels above or below which the effectiveness of the additive is reduced to half its optimum capacity.

(vii) Enzyme shelf life.

(viii) Enzyme optimum storage conditions.

(10) Laboratory Requirements for Technical Product Data. Follow specifications in § 300.85(a)(16).

(d) Burning agents. EPA does not require technical product data submissions for burning agents and does not include burning agents on the NCP Product Schedule.

§ 300.86 Addition of products to schedule.

(a) To add a dispersant, surface collecting agent, or biological additive to the NCP Product Schedule, the technical product data specified in § 300.85 must be submitted to the Emergency Response Division, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. If EPA determines that the data submitted meet the relevant requirements, EPA will add the product to the schedule.

(b) EPA will inform the submitter in writing, within 60 days of the receipt of technical product data, of its decision on adding the product to the schedule.

(c) The submitter may assert that certain information in technical product data submissions is confidential business information. EPA will handle such claims pursuant to the provisions in 40 CFR Part 2, Subpart B. Such information must be submitted separately from non-confidential information, clearly identified, and clearly marked "Confidential Business Information." If the submitter fails to make such a claim at the time of submittal, EPA may make the information available to the public without further notice.

(d) The submitter must notify EPA of any changes in the composition or formulation of the dispersant, surface collecting agent, or biological additive. On the basis of this data, EPA may require retesting of the product if the change is likely to affect the effectiveness or toxicity of the product.

(e) This listing on the NCP Product Schedule does not constitute approval of the product. To avoid possible misinterpretation or misrepresentation, any label, advertisement, or technical literature that refers to the placement of the product on the NCP schedule must either reproduce in its entirety EPA's written statement, referred to in Subsection (b), that the product has been listed on the schedule, or include the following disclaimer, which must be conspicuous and must be fully reproduced as follows:

DISCLAIMER

[PRODUCT NAME] is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of [product name] on an oil discharge. This listing means only that data have been submitted to EPA as required by Subpart B of the National Contingency Plan, § 300.85.

Failure to comply with these restrictions or any other improper attempt to demonstrate EPA approval of the product shall constitute grounds for removing the product from the NCP Product Schedule.

APPENDIX A TO PART 300—UNCONTROLLED HAZARDOUS WASTE SITE RANKING SYSTEM; A USER'S MANUAL

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NCP PRODUCT SCHEDULE

<u>NUMBER</u>	<u>MANUFACTURER</u>	<u>PRODUCT</u>
BP-1100X BASED)	PUMPERSTON WORKS	DISPERSANT (HYDROCARBON SOLVENT
COLD CLEAN 500	ESSEX FIRE & SAFETY CO. (FORMERLY ADAIR EQUIP.	DISPERSANT (WATER BASED)
CONCO DISPERSANT K.	CONTINENTAL CHEMICAL CO.	DISPERSANT (CONCENTRATE)
COREXIT 7664	EXXON CHEMICAL COMPANY	DISPERSANT (WATER BASED)
COREXIT 8667 BASED)	EXXON CHEMICAL COMPANY	DISPERSANT (HYDROCARBON SOLVENT
COREXIT 9527	EXXON CHEMICAL COMPANY	DISPERSANT (CONCENTRATE)
ECO ATLANTOL AT-7	ASPRA, INC.	DISPERSANT (WATER BASED)
FINASOL OSR-7	AMERICAN PETROFINA, INC.	DISPERSANT (WATER BASED CONCENTRATE)
GOLD CREW DISPERSANT	ARA CHEM. INC.	DISPERSANT (WATER BASED)
OSD/LT 1m OIL SPILL DISPERSANT	DREW CHEMICAL CORP.	DISPERSANT (CONCENTRATE)
PETRO-GREEN ADP-7	PETRO-GREEN, INC.	DISPERSANT (WATER BASED CONCENTRATE)
PETROMEND, MP-900-W	PETROMEND, INC.	DISPERSANT (WATER BASED CONCENTRATE)
PROFORM-POLLUTION CONTROL AGENT	PROFORM PRODUCTS CORP.	DISPERSANT (WATER BASED CONCENTRATE)
SEA MASTER, NS-555	WHALE CHEMICAL CO, INC.	DISPERSANT (WATER BASED)
SLIK-A-WAY	MI-DEE PRODUCTS, INC.	DISPERSANT (WATER BASED)
DISPERSANT 11	DUBOISE CHEMICALS	DISPERSANT (CONCENTRATE)
TOPSALL #30	STUTTON NORTH CORP.	DISPERSANT (OIL AND PETROLEUM CLEANING AGENT)
COREXIT 9550	EXXON CHEMICAL AMERICAS	DISPERSANT (HYDROCARBON SOLVENT BASED)
JANSOLV-60 DISPERSANT	SUNSHINE TECHNOLOGY CORP.	DISPERSANT (PRINCIPALLY WATER BASED WITH SOME SOLVENT)
RUFFNEK	MALTER INTERNATIONAL CORP.	DISPERSANT (OIL AND PETROLEUM CLEANING AGENT) (CONCENTRATE)

NUMBERMANUFACTURERPRODUCT

NEOS AB3000

NEOS COMPANY LIMITED

DISPERSANT (HYDROCARBON BASED)

CRUDEX

ENVIRONMENTAL SECURITY INC DISPERSANT (ORGANIC SUFACTANT BASED)

BIO SOLVE

METRA CHEM CORP

DISPERSANT (WATER BASED)

NK-3

GFC CHEMICAL COMPANY, INC DISPERSANT (WATER BASED)

ENERSPERSE 700

BP DETERGENTS LIMITED

DISPERSANT (SOLVENT BASED)

6

SURFACE COLLECTORS

<u>NUMBER</u>	<u>MANUFACTURER</u>	<u>PRODUCT</u>
COREXIT OC-5	EXXON CHEMICAL AMERICAS	SURFACE COLLECTING AGENT
OILCOMPRESS/OILBINDER	LISTEX CHEMICALS	SURFACE COLLECTING AGENT
CIL HERDER	ASI, INC.	SURFACE COLLECTING AGENT

<u>NUMBER</u>	<u>MANUFACTURER</u>	<u>PRODUCT</u>
HYDROBAC	POLYBAC CORP	BIOLOGICAL ADDITIVE
NO-SCUM	NATURAL HYDROCARBON ELIMINATION CO.	BIOLOGICAL ADDITIVE
PETROBAC	POLYBAC CORP	BIOLOGICAL ADDITIVE
PHENOBAC	POLYBAC CORP	BIOLOGICAL ADDITIVE
PETRODEG TM-100	BIOTEKNIKA INTERNATIONAL INC.	BIOLOGICAL ADDITIVE
PETRODEG TM-200	BIOTEKNIKA INTERNATIONAL INC.	BIOLOGICAL ADDITIVE
TYPE I DRC PLUS	FLOW LABORATORIES, INC.	BIOLOGICAL ADDITIVE
TYPE R-5, DBC PLUS	FLOW LABORATORIES, INC.	BIOLOGICAL ADDITIVE
ROLFZYME	INTERNATIONAL ENZYMES, INC.	BIOLOGICAL ADDITIVE
INIPOL EAP 22	CECA S.A.	BIOLOGICAL ADDITIVE

MISCELLANEOUS OIL CONTROL AGENTS

<u>NUMBER</u>	<u>MANUFACTURER</u>	<u>PRODUCT</u>
SEE-JELL tm	AJINOMOTO CO., INC.	OIL SPILL GELATINIZATION AGENT
OIL BOND-100	C d F CHIMIE S.A.	OIL SPILL SOLIDIFYING AGENT
LIQUID OIL BOND-200	TOHO TITANIUM CO. LIMITED	OIL SPILL GELATINIZATION AGENT
ELASTOL	GENERAL TECHNOLOGY APPLICATIONS, INC.	OIL VISCOELASTIC ENHANCING AGENT
OIL SPILL ELASTOL	GENERAL TECHNOLOGY APPLICATIONS, INCL	OIL VISCOELASTIC ENHANCING AGENT
CON-LEI	LEGACY ENVIRONMENTALISTS INC.	COLLOIDAL SUSPENSION AGENT
OIL VISCOELASTIC ENHANCING	GENERAL TECHNOLOGY APPLICATIONS, INC.	AGENT
OIL SPILL ELASTOL	GENERAL TECHNOLOGY	OIL

SPECIAL NOTICE

BIOLOGICAL METHODS SOUGHT FOR POTENTIAL APPLICATION TO CLEANUP OF ALASKAN OIL SPILL. The Environmental Protection Agency's Office of Research and Development is seeking companies or organizations which can offer commercial methods capable of enhancing the biodegradation of crude oil residues on the Alaskan shorelines resulting from the Exxon-Valdez oil spill. This notice is a request for submittal of information on potentially feasible bioremediation methods from interested vendors who would like to have their method considered for potential use in Alaska. EPA has requested the National Environmental Technology Applications Corporation to convene a panel of national experts to evaluate these methods. Based upon an evaluation of the data and information submitted in response to this notice some of the most promising biological methods may be selected for additional laboratory and toxicity testing and may be proposed for field tests in Alaska as early as feasible in 1990. This notice is the only request for information that will be issued for this activity, and it specifies all the information that must be submitted to the address given below by February 16, 1990. A request for proposal for this activity will not be issued. Because of the schedule established, incomplete submittals cannot be considered. Products used in the biological methods proposed by interested vendors must meet all of the following criteria, or they will be excluded from consideration at this time: 1) product must not contain genetically engineered organisms; 2) product must be listed on the National Contingency Plan's (NCP) Product Schedule, as required under 40CFR300, Subpart H, or such product listing must already have been applied for; 3) product must not contain a known or suspected human or animal carcinogen; 4) product must not contain a known pathogen to humans or indigenous flora or fauna; 5) product must not contain a chemical listed in 40CFR268 Land Disposal Restrictions; and 6) product must be supported by data that indicate it has worked successfully with crude oil or weathered oil. Interested vendors must demonstrate in their submittal that their method successfully meets all of the above criteria. In addition, interested vendors should submit as much of the following information as is practical: 1) those data and other information used to support the application for product listing in the NCP's Product Schedule, as required under 40CFR300, Subpart H (any confidential business information should be clearly identified to prevent its unintentional release); 2) a description and results of any tests performed in a laboratory or the field on crude oil or weathered oil that indicate that the proposed method enhances biodegradation; 3) results of any acute or chronic toxicity tests performed on agents used in the method; 4) a description of how the proposed biological method is to be used on a large scale, including a justification of its practicality; 5) an indication that the proposed use of the method can comply with all applicable federal, state, or local laws and regulations; and 6) a statement of corporate or organizational qualifications, including previous experience with hydrocarbon degradation, observed results, personnel resources, and capabilities. This additional information will be used to evaluate and select proposals for further testing. These additional tests may include toxicity tests on native Alaskan species as being developed by the Alaskan Department of Environmental Conservation. Based on the results of this evaluation EPA may propose to the Exxon Corporation and to the Regional Response Team (which includes Federal and Alaskan State agencies) that certain methods be field tested in Alaska in 1990. Interested companies or organizations are asked to submit the requested information on their biological method by February 16, 1990, to the National Environmental Technology Applications Corporation (NETAC), 615 William Pitt Way, Pittsburgh, PA 15238. For answers to questions on this notice, write or call Michael Masracchi of the U.S. EPA, Office of Research and Development (RD-681), 401 M Street, SW, Washington, DC 20460. Phone (202) 382-5748, collect calls not accepted.

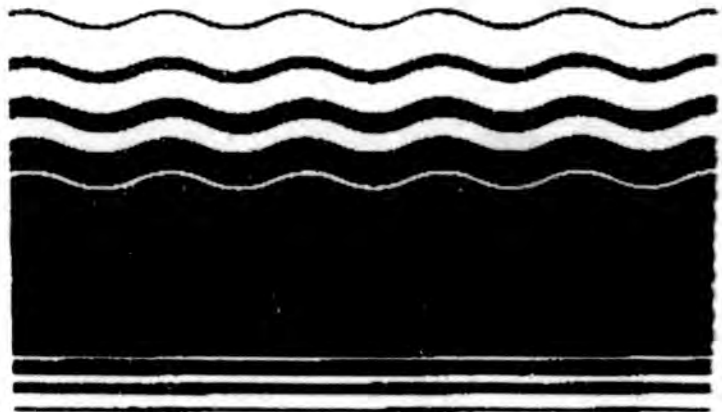


The Superfund Innovative Technology Evaluation Program:

Technology Profiles

SITE

***SUPERFUND INNOVATIVE
TECHNOLOGY EVALUATION***



FOREWORD

The U.S. Environmental Protection Agency (EPA) is charged by Congress with protecting the Nation's land, air, and water resources. As the enforcer of national environmental laws, the EPA strives to balance human activities and the ability of natural systems to support and nurture life. A key part of the EPA's effort is its research into our environmental problems to find new and innovative solutions.

The Risk Reduction Engineering Laboratory (RREL) is responsible for planning, implementing, and managing research, development, and demonstration programs to provide an authoritative, defensible engineering basis in support of the policies, programs, and regulations of the EPA with respect to drinking water, wastewater, pesticides, toxic substances, solid and hazardous wastes, and Superfund-related activities. This publication is one of the products of that research and provides a vital communication link between the researcher and the user community.

Now in its fourth year, the Superfund Innovative Technology Evaluation (SITE) Program is part of EPA's research into cleanup methods for hazardous waste sites around the nation. Through cooperative agreements with developers, alternative or innovative technologies are refined at the bench- and pilot-scale level and then demonstrated at actual sites. EPA collects and evaluates extensive performance data on each technology to use in remediation decision-making for hazardous waste sites.

This document profiles fifty-two demonstration and emerging technologies being evaluated under the SITE Program. Each technology profile contains a description of the technology; a discussion of its applicability to various wastes; an update on its development or demonstration status; and any available demonstration results. This document is intended for EPA Regional decision-makers and other interested individuals involved in hazardous waste site cleanups.

E. Timothy Oppelt, Director
Risk Reduction Engineering Laboratory

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PROGRAM DESCRIPTION

INTRODUCTION

The Superfund Amendments and Reauthorization Act of 1986 (SARA) directed the Environmental Protection Agency (EPA) to establish an "Alternative or Innovative Treatment Technology Research and Demonstration Program." In response, the EPA's Office of Solid Waste and Emergency Response and the Office of Research and Development established a formal program called the Superfund Innovative Technology Evaluation (SITE) Program, to accelerate the development and use of innovative cleanup technologies at hazardous waste sites across the country.

The SITE Program is comprised of the following five component programs:

- Demonstration Program
- Emerging Technologies Program
- Measurement and Monitoring Technologies Development Program
- Innovative Technologies Program
- Technology Transfer Program

This document focuses on the Demonstration and Emerging Technologies Program, both of which are designed to assist private developers in commercializing alternative technologies for site remediation. Figure 1 depicts the process of technology development from initial concept to commercial use, and shows the interrelationship between these two programs.

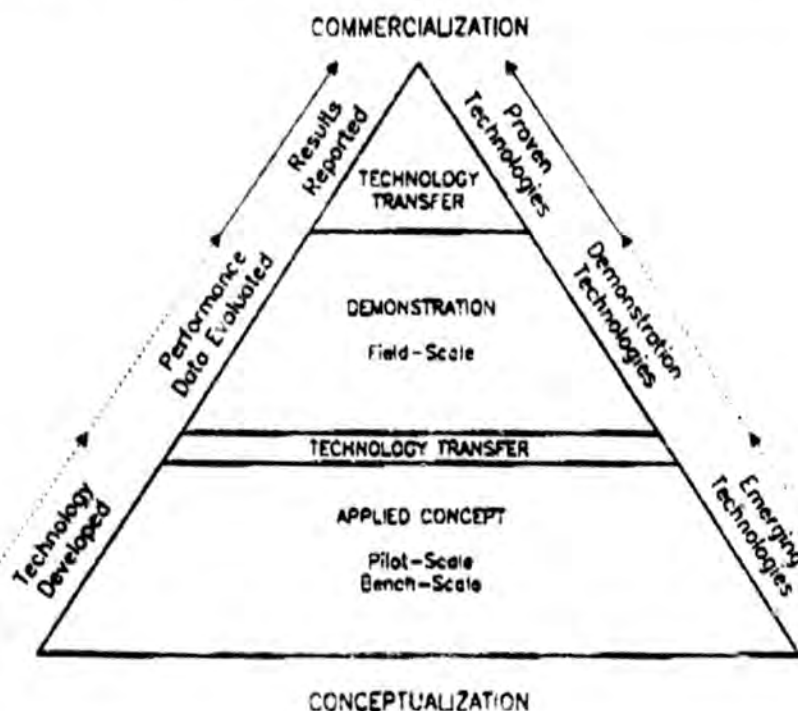


Figure 1. Development of Alternative and Innovative Technologies

Before a technology can be accepted into the Emerging Technology Program, sufficient data must be available to validate its basic concepts. The technology is then subjected to a combination of bench- and pilot-scale testing in an attempt to apply the concept under controlled conditions. After testing and development, the technology's performance is documented and a report is prepared, which may include recommendations for further developing the technology.

If bench and pilot test results are encouraging, a technology may proceed with approval to a field demonstration. In the Demonstration Program, technologies are field-tested on hazardous waste materials. Engineering and cost data are gathered to assess the technologies applicability for site clean-up. The Demonstration (Technology Evaluation) Report presents information such as: testing procedures, sampling and analytical data, quality assurance/quality control standards, and significant results.

To encourage general use of the technology, a second report, called the Applications Analysis Report, is prepared to evaluate all available information on the specific technology and analyze its applicability to other site characteristics, waste types, and waste matrices. As part of the formal SITE Technology Transfer Program, these informational documents are published and distributed to the user community to provide reliable technical data for Superfund decision making, and to promote the technology's commercial use.

Currently there are 14 technologies participating in the Emerging Technology Program. These projects vary from a constructed wetlands-based treatment technology to bench- and pilot-scale studies of a laser-stimulated photochemical oxidation process.

The Demonstration Program has 37 active participants, divided into the following five categories: thermal (6 projects), biological (4), chemical (3), physical (11), and solidification/stabilization (9). In addition, 4 technologies involve combinations of these treatment categories. To date, twelve technology demonstrations have been completed; several reports have been published and others are in various stages of production. Table 1 lists these demonstrations, in chronological order, along with information on the technology transfer opportunities for the project.

OTHER SITE PROGRAMS

Measurement and Monitoring Technologies Development Program

Under this program, EPA laboratories explore new and innovative technologies for assessing the nature and extent of contamination as well as evaluating remedial/removal activities performed at hazardous waste sites. Effective measurement and monitoring technologies at Superfund sites are needed to: (1) accurately assess the degree of contamination at a site; (2) provide data and information to determine impacts to health and the environment; (3) supply data for the selection of the most appropriate remedial action; and (4) monitor the success/failure of a selected remedy. To date, the program has focused on two major research areas -- immunoassays for toxic substances and fiber optic sensing for in-situ analysis.

My name is David Shaw. I am a Professor of Marine Science and Chemistry at the University of Alaska Fairbanks and have been conducting environmental research in Prince William Sound since 1973. I was present at the Fairbanks LIO during the hearing on SB421 on the evening of March 21 and had signed up to testify. However, because of a technical mix-up, the hearing adjourned before I could speak. Consequently I am providing this written testimony.

I broadly support SB421. I believe that it is important for the State of Alaska to establish a mechanism for obtaining high quality technical advice related to oil spill prevention, mitigation, clean-up and effects.

In order to meet this need the proposed Commission must have broad authority and independence. The Commission's duties, while dealing with technical matters, have broad implications on public policy. It is essential that the Commission be free to examine the technical merits and shortcomings of various courses of action even when such examination calls into question existing policy. One important way to ensure this independence is to provide the Commission with resources to set up its own staff.

I strongly support the broad range of duties proposed for the Commission. For instance, I think that the State would benefit greatly from a technical analysis of policy options for beach clean-up. This would include, but go far beyond, establishment of test criteria for proposed cleaning agents and methods. At the present time there are no generally agreed upon specific goals for clean-up or clear criteria for evaluating when goals have been reached. In this situation it is entirely possible that the best available clean-up method will result in overall environmental harm. This has in fact happened in previous spills. The proposed Commission could examine these complex and difficult questions before another spill.

I also strongly support Recommendation No. 57 of the Oil Spill Commission Report which calls for the creation of an oil spill research institute within the University of Alaska. Important steps have already been taken in the area of oil spill research by the federal government and by the Cordova Science Center. However, the state's needs for focused oil spill research are greater than these entities can be expected to provide. The State needs research about possible spills in arctic sea ice, on tundra, on frozen rivers, and numerous types of aquatic and terrestrial environments all around the state. The University has already formulated a plan to harness existing oil spill research talent from around the state to address this need with a minimum of new administration. With legislative support and funding the University's Oil Spill Research Center could quickly become a productive reality.



UNIVERSITY OF ALASKA ANCHORAGE

ARCTIC ENVIRONMENTAL INFORMATION AND DATA CENTER

707 A STREET • ANCHORAGE • ALASKA 99501

(907) 279-4511
FAX 279-6847
BUSINESS 257-2722
DIRECTOR 257-2727

INFORMATION SERVICES 257-2733
COMMUNICATION SERVICES 257-2725
SCIENCE RESOURCES 257-2711
CLIMATE CENTER 257-2737

March 22, 1990

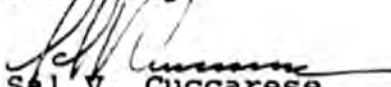
Senator Drue Pearce
Pouch V
Juneau, AK 99811

Attn: Judy Jordan

Dear Senator Pearce:

My name is Sal V. Cuccarese and I am testifying in support of SB 421. By way of background, I am Acting Director of the University of Alaska Anchorage's (UAA) Arctic Environmental Information and Data Center, and speak for Lee Gorsuch, Dean of the School of Public Affairs and for the UAA campus generally. I and my cognizant colleagues fully support the initiative represented by SB 421 for it addresses a major problem facing the state today, namely lack of a concise, unambiguous knowledge base concerning the availability and efficacy of oil and hazardous substance containment and cleanup technologies. The problem of oil and hazardous substance containment and cleanup is enormous and pervasive, extending far beyond concerns associated with major single-point crises such as attended the wreck of the tank ship Exxon Valdez. Rather, it touches on all aspects of society, reaching even to our most remote communities and locales. This problem is one which threatens the quality of life for all and it begs immediate attention. As a beginning, we believe it essential that some entity be tasked with conducting a concerted effort to assemble and synthesize all available information pertaining to the control of the range of common hazardous substances at large in the Alaska environment today, this to provide the basis for identifying and directing needed research. The subject information base is surprisingly large and spans many disciplines from engineering to chemistry and from biology to economics. Such information would best be assembled at a central repository having direct linkages to larger libraries, research centers, and agencies. Doing so would lessen research costs by reducing information search time and by eliminating potentially redundant research. We believe SB 421 is a constructive first step toward this end and are pleased to endorse it.

Sincerely,


Sal V. Cuccarese
Acting Director

SVC:pa
11AA1:021a

cc: Dean Lee Gorsuch